United States Department of Agriculture

Forest Service

Pacific Southwest Region

R5-MB-271
March 2014

Preliminary Environmental Assessment

for

Barrett 4wd Trail Reconstruction Project

Eldorado National Forest

Preliminary Environmental Assessment
Barrett 4wd Trail Reconstruction

USDA Forest Service, Eldorado National Forest, Pacific Ranger District
El Dorado County, California

Background

This analysis is tiered to and is part of the implementation of the Record of Decision for the 2013 Eldorado National Forest Travel Management SEIS, which identified 18 routes where corrective actions were needed prior to adding the routes back onto the Eldorado National Forest Motor Vehicle Use Map (MVUM) as part of the system of routes designated for motor vehicle use.

The Barrett 4wd Trail is located on the Pacific Ranger District, Eldorado National Forest, T 12 N R 16 E Sections 8, 17, 20, and 28, just west of the Desolation Wilderness. Barrett Lake 4WD Trail is opened seasonally when spring maintenance is completed and the District Ranger determines that the trail is in a condition to prevent resource damage, usually in mid-July. The gate is closed in the fall when heavy rain or snow creates conditions that could lead to resource damage.

Purpose and Need

The purpose of this project is to analyze and implement corrective actions for the Barrett Lake 4wd Trail to comply with the 2004 Sierra Nevada Forest Plan Amendment Riparian Conservation Objectives Standard and Guideline 100 as it pertains to meadows in the Eldorado National Forest.

Standard and Guideline 100 reads,

> *"Maintain and restore the hydrologic connectivity of streams, meadows, wetlands and other special aquatic features identifying roads and trails that intercept, divert or disrupt natural surface and subsurface water flow paths. Implement corrective actions where necessary to restore connectivity."*

Three of the meadows on the Barrett Lake 4wd Trail were identified as needing corrective actions.

Barrett Lake 4wd Trail at Meadow 16E21-1

16E21-1 is a small meadow. The area of most concern is on the south side of the meadow where water flowing down a steep segment of the trail has eroded a plume of sediment into the meadow.

Barrett Lake 4wd Trail at Meadow 16E21-5

The Barrett Lake 4wd Trail crosses through the edge of this meadow for about 300'. There are ephemeral stream channels in the meadow on either side of the road. A log structure has been

installed at one point where the trail crosses a stream channel. The structure was intended to protect the crossing, but appears to have resulted in some widening of the crossing. At another location water seeps from downhill of the trail into the lower stream. There is some evidence that the trail disrupts connectivity between the two streams and affects the water table in the meadow. One end of a culvert under the trail was visible but the other end buried. There is also a non-motorized trail that comes from the Van Vleck area and meets the Barrett 4wd trail in the middle of Meadow 16E21-5. This trail is continued as 16E31 Red Peak Stock trail leaving Barrett 4wd Trail south of Meadow 16E21-5 and heads east into Desolation Wilderness.

Barrett Lake 4wd Trail at Meadow 16E21-6

This is the largest of the three meadows, with the Barrett 4wd trail crossing through the edge of the meadow for approximately 0.1 miles. Three ephemeral streams cross the trail within the meadow, and show some signs of stream channel degradation. There is a steep section of trail as it drops into the meadow on the south side where water running down the trail is being channeled into the meadow at the first stream crossing. This meadow has been used as a Cow Camp historically. The impacts from the trail occur in a small portion of the meadow on the eastern edge.

Public Involvement

Issues

A scoping letter and description of the proposed action was sent to interested parties including all appellants of the 2013 Eldorado National Forest Travel Management SEIS, Eldorado, Amador and Alpine Counties, and representatives of local tribes on December 13, 2013, with comments requested by Jan 17, 2014. The project was also listed in the SOPA and proposed action posted of the Eldorado National Forest public website. Seven letters were received with comments on the proposed action, listed in Appendix B. A summary of public comments received and how they are being addressed is included in Appendix A.

No unresolved issues were received that lead to creation of additional alternatives.

Alternatives

Alternative 1 - Proposed Action

The Eldorado National Forest proposes to reconstruct three segments of the Barrett Lake 4wd Trail (16E21) that have been found to be affecting the hydrologic connectivity of meadows 16E21-1, 16E21-5 and 16E21-6 respectively. If the proposed action is approved, the following activities would occur:

Barrett Lake 4wd Trail at Meadow 16E21-1:

The proposed action for Meadow 16E21-1 is to construct approximately two rolling dips in the trail to slow and divert water off of the trail before it reaches the meadow. An existing sediment plume in the meadow would be removed using hand tools and wheelbarrows, and the area vegetated as needed by seed and/or planting plugs of native meadow species. Excess material may be used in other trail repairs in the Proposed Action.

Barrett Lake 4wd Trail at Meadow 16E21-5:

A short reroute of the Barrett Lake 4wd Trail around the east side of Meadow 16E21-5 is proposed. The proposed reroute is approximately 0.27 miles in length. The new segment would be constructed to a similar standard as the rest of the trail (TC2- Four Wheel Drive Trail > 72", native material with limited grading.). Traveling from south to north, the reroute would depart the existing trail before it drops into the meadow. There would be some grading and tree removal required. The number of trees greater than 15" diameter breast height to be removed is estimated at 4 to 8. There is one crossing of an ephemeral stream. The channel at that point is primarily lined with rock, however some armoring of the channel approach and departure (using linked permeable concrete pavers over drain rock or riprap.) The proposed reroute ties back into the existing trail just north of the meadow.

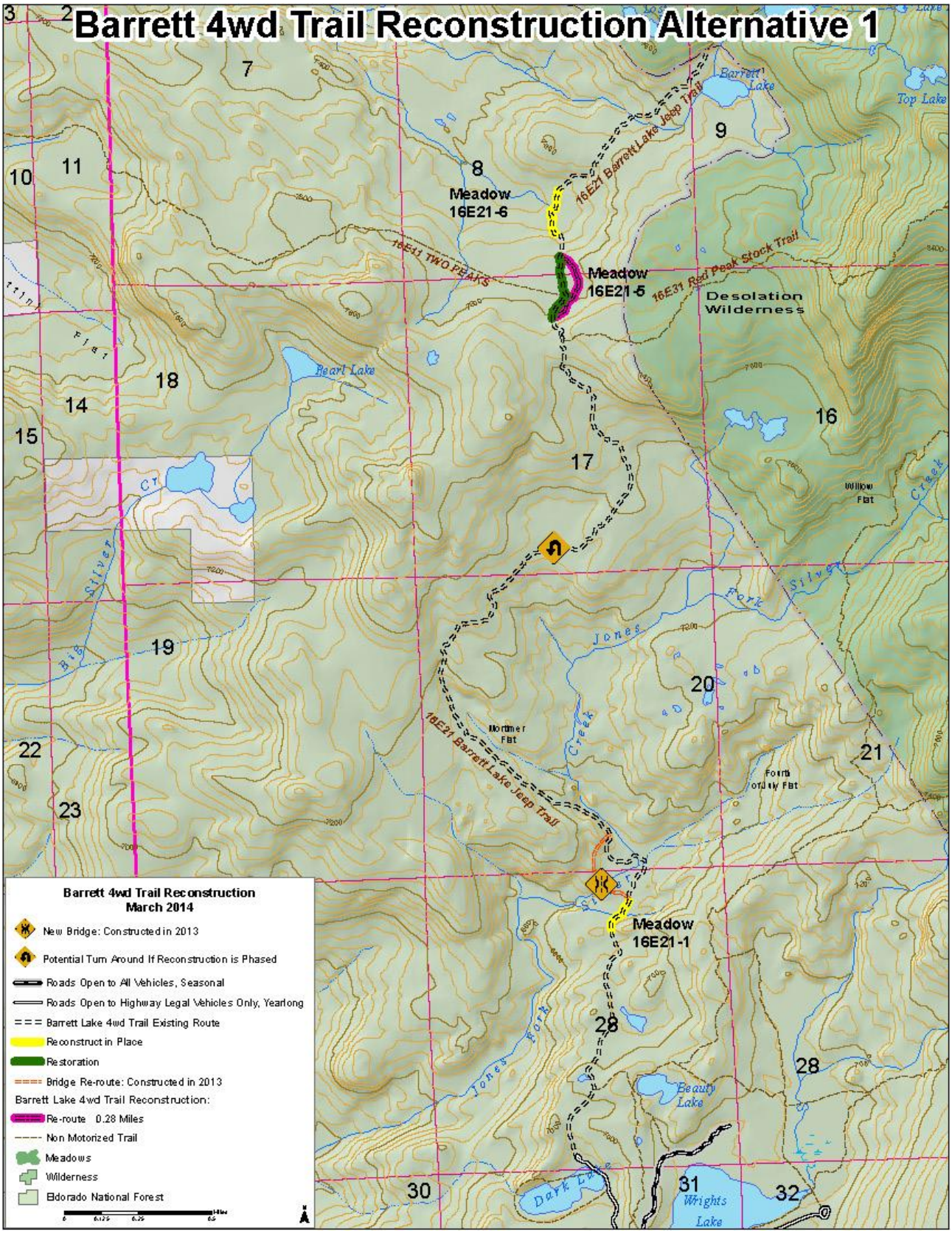
The original portion of the trail in the meadow would be restored by removing the existing log structure and culvert, scarifying the trail and revegetated using a combination of locally collected transplants and native seeds. Where necessary to restore natural drainage, the trail would be regraded to allow water to cross to the other side.

Barrett Lake 4wd Trail at Meadow 16E21-6

A number of potential reroutes around Meadow 16E21-6 were explored, however each of them had other resource impacts that were of concern. Therefore, the proposed action for meadow 16E21-6 is to reconstruct several sections of the trail segment in place.

Rolling dips would be constructed on both the south and north trail approaches to the meadow to divert water now running down the trail. One rolling dip would be constructed on the north end, and several on the south end.

The three ephemeral stream channel crossings located on the trail within the meadow would be stabilized by regrading and hardening with materials such as linked permeable concrete pavers over drain rock, riprap or french drains constructed with geotextile and drain rock, enhancing the subsurface flow of water and promoting hydrologic connectivity of the meadow.


Barrett 4wd Trail Reconstruction Alternative 1
Meadow 16E21-6
Meadow 16E21-5
Meadow 16E21-1
16E21 Barrett Lake Jeep Trail
16E11 TWO PEAKS
16E31 Red Peak Stock Trail
Desolation Wilderness
Barrett Lake
Top Lake
Pearl Lake
Beauty Lake
Wrights Lake
Dark Lake
Willow Flat
Mortimer Flat
Fourth of July Flat
Jones Fork Silver Creek
Big Silver Cr
Barrett 4wd Trail Reconstruction
March 2014
New Bridge: Constructed in 2013
Potential Turn Around If Reconstruction is Phased
Roads Open to All Vehicles, Seasonal
Roads Open to Highway Legal Vehicles Only, Yearlong
Barrett Lake 4wd Trail Existing Route
Reconstruct in Place
Restoration
Bridge Re-route: Constructed in 2013
Barrett Lake 4wd Trail Reconstruction:
Re-route 0.28 Miles
Non Motorized Trail
Meadows
Wilderness
Eldorado National Forest

Implementation:

The Forest Service plans to implement construction between July 15 and October 15, 2014, when the trail is dry. If for any reason the work requiring the helicopter cannot be completed in 2014, the project will be phased, with work for Meadow 16E21-1 in 2013 to be done by a Forest Service crew or volunteer group, and a temporary turn-around area delineated by physical barriers in an open granite area past the new bridge in the southern part of section 17. The site would be checked and approved by the Forest Service botanist and Heritage Resource specialist. The the portion of the trail beyond the turn-around would remain closed to public motorized use until the work is completed at Meadows 16E21-5 and 16E21-6. The work for those meadows would then be rescheduled for July 15 – October 15, 2015.

Construction and stump removal on the reroute and some work at stream crossings to be reinforced would be done with a trail tractor and small excavator. The equipment and materials will be delivered to one or more existing landing sites off of Wrights Lake Road (see maps and photos in in appendix E) and then lifted by helicopter and set down at already disturbed locations on the trail for use in the construction. Big Hill Helispot would be used for refueling the helicopter. After completion, equipment and any excess materials will be lifted out. Helicopter operations will be needed intermittantly over several different days. Any helicopter use would be scheduled mid week or after Labor Day when the amount of recreation use in the Wrights Lake area is lower. Flight paths would avoid the Wrights lake recreation area and the Dark Lake and Wrights Lake Recreation Residence tracts. There would be some boulder removal along the reroute to be accomplished by rock drilling and insertion of expansion material to break the rocks. Some smaller amounts of materials may be brought in up the Barrett 4wd trail by volunteers using 4wd vehicles with small trailers. Finish work and seeding or planting of plugs for restoration will be done by hand.

Design Criteria

The following mitigation measures and coordinating requirements are incorportated into this alternative:

Riparian Conservation Areas

- Project implementation shall comply with with all applicable BMP's described in detail in the Hydrology Report.
- Refueling of helicopters would take place at Big Hill Helispot. Refueling of any other equipment would take place in RCA's only there there is no other alternative. Spill prevention and cleanup of hazardous materials would be implemented in acordance wit FS timber sale type B contract clauses and in accordance with the Eldorado Hazardous Spill Notification and Response Plan.

Sensitive Plants and Noxious Weeds

- If new sensitive or watch plant occurrences are discovered during project implementation the project botanist would be notified to develop necessary protection measures.
- If a section of the Barrett 4wd trail is opened prior to completing proposed restoration activities at meadow 16E21-6 and 16E21-5, the proposed barricade and designated turn-out would be surveyed for sensitive plant species prior to reopening the trail. If sensitive plants are found, the designated turn out location would be located so to not impact Sensitive plant populations.
- All vehicles and off-road equipment vehicles would be cleaned to insure it is free of soil, seeds, vegetative matter or other debris before entering National Forest System lands to prevent the introduction or spread of invasive plants. Prior to the start of operations, the Forest Service would do a visual inspection for such debris.
- All earth-moving equipment, gravel, fill or other materials would be weed free. Onsite sand, gravel, rock, or organic matter would be used where possible.
- Straw or mulch used for erosion control will be certified weed-free. A certificate from the county of origin stating the material was inspected is required.
- Any seed used for restoration or erosion control will be from a locally collected source (ENF, Seed, Mulch and Fertilizer Prescription, 2000).
- Off-site equipment staging areas used for helicopter transport will be free of invasive species.
- Areas of bare ground created during trail reconstruction activities would be replanted with an appropriate mix of native species developed by the project botanist.
- Known infestations of high priority invasive plant infestations within the project area would be flagged for avoidance.

Aquatic Wildlife

- Should any TES species be located before, or during implementation the project, district biology staff should be informed, and steps taken to evaluate, and mitigate any possible effects not covered by this evaluation/assessment.

Terrestrial Wildlife

- To avoid disturbance to nesting goshawks, staging of helicopter loads and helicopter use should not occur at load staging sites A and B between February 15 and September 15, unless surveys are conducted and determine that goshawks are not nesting within a quarter

mile of the staging areas or a biologist determines nesting success would be unlikely to be affected by activities.

- To avoid disturbance to nesting spotted owls, staging of helicopter loads and helicopter use should not occur at load staging sites A and B between March 1 and August 15, unless surveys are conducted and determine that spotted owls are not nesting within a quarter mile of the staging areas or a biologist determines nesting success would be unlikely to be affected by activities.

Cultural Resources

- Features and artifact concentrations at the historic Barrett/University Cow Camp (FS site 05-03-55-534) located at Meadow 16E21-6 will be flagged by the cultural resource specialist for avoidance during project implementation to prevent inadvertent effects due to equipment operation and collection of native materials while reconstructing the trail and stabilizing stream crossings.

Visual Resources

- Selection of materials for project construction including concrete paver blocks and rock shall be done to blend with the colors of the surrounding environment as much as possible.

Helicopter Operations and Public Safety

- A project Aviation Plan will be prepared, and helicopter operations coordinated through the Forest Aviation Officer.
- Temporary traffic control for staging areas shall meet all requirements as stated in the Manual on Uniform Traffic Control Devices (MUTCD). Part 6, Chapter 6A-6I, located at http://mutcd.fhwa.dot.gov
- Any helicopter use would be scheduled mid-week or after Labor Day when the amount of recreation use in the Wrights Lake area is lower. Flight paths would avoid the Wrights lake recreation area and the Dark Lake and Wrights Lake Recreation Residence tracts.

Project Implementation Monitoring

Monitoring will be done to determine the effectiveness of corrective actions taken for Meadows 16E21-1, 16E21-5 and 16E21-6. The monitoring will be done at least once per year for a 5 Year period. If maintenance needs on the reroute and repair structures are observed, the hydrologist will work with the District OHV manager to identify and prioritize the maintenance work that is needed. Restoration areas will also be monitored for three years following project completion to insure invasive species do not become established after restoration activities.

Trail Condition Assessment, Maintenance and Trend Monitoring:

In addition to the reconstruction work to be done at the three meadows identified above, trail maintenance work will continue to occur on an ongoing basis on the remainder of the Barrett Lake 4wd Trail. The Protocols for Trail Condition Assessment, Maintenance and Monitoring are spelled out in detail in the annual Eldorado National Forest Soil Conservation Plan which is updated annually. This plan addresses how the State of California 2008 Soil Conservation Standards will be met. Under this protocol, the Barrett trail is broken down into segments that are rated red, yellow or green depending on the potential for soil erosion and/or drainage concerns. Trail Condition Evaluations are done annually to identify trail segments which need more focused maintenance, reconditioning or rerouting.

Annual maintenance activities are considered under a separate Categorical Exclusion (CE) which is reviewed and updated each year as part of the ongoing OHV program. Typical annual maintenance work includes removal of fallen trees and other large down woody material, inspection and repair of trail signs, inspection and repair of existing drainage structures or construction of new structures as necessary, and annual tread maintenance. Maintenance work is done within the existing trail prism limits with the exception of where an existing feature already exist (i.e. lead-out ditch, culvert inlet or outlet), and is done in accordance with specifications outlined in the Forest Service Trail Maintenance Handbook and Best Management Practices (BMP's).

The Trend Monitoring program utilizing photo points will continue to be used to monitor any broad based changes in trail conditions over time.

Alternative 2 – No Action

Under this alternative, no work would be done on the Barrett Lake 4wd trail, and the route would not be reopened to public motor vehicle use.

Alternatives Considered but Eliminated from Detailed Study

Two short alternative reroutes were explored just east of meadow 16E21-6. The lower one went through the old cow camp and crossed three ephemeral drainages. Another route was considered uphill just east of separated by a large rock outcropping. That potential reroute crossed 4 ephemeral drainages including a braided stream channel on the south end. The interdisciplinary team felt the potential impacts from implementing either of these reroutes were greater than impacts of the trail in its current location along the edge of meadow 16E21-6. In addition, both of the potential reroutes would have had a higher probability of impacting cultural resources at the Cow Camp. These reroutes were eliminated from further consideration in favor of fixing the trail in place at meadow 16E21-6.

An additional longer reroute was also explored that would take off of the Barrett 4wd Trail south of Meadow 16E21-5 and traverse approximately .83 miles near the ridge around both meadows 16E21- 5 and 16E21-6, tying back into the Barrett 4wd Trail on the north side of Meadow 16E21-6. This potential reroute was high enough on the slope that it avoided all but one drainage crossing and would be the preferred solution if hydrology were the only concern. The route did cross some areas of potentially unstable granitic soils that would require engineered solutions and possibly be a maintenance concern. The main concern with this potential reroute is its close proximity to the Desolation Wilderness. The wilderness boundary is just west of the ridgeline, and the proximity of the proposed reroute to the ridge was such that it could be inviting for users to leave the trail and drive the short distance to the ridge to enjoy the views, thus crossing over into the Wilderness area. This potential reroute was eliminated from further analysis in favor of the shorter reroute around meadow 16E21-5 and the fix in place option for meadow 16E21-6.

Tiering and Incorporation by Reference

In order to eliminate repetitive discussion and documentation, this environmental assessment tiers to the Eldorado National Forest Land and Resource Management Plan (LRMP of 1989) as amended by the Sierra Nevada Forest Plan Amendment, (January 2004), the 2008 Eldorado National Forest Public Wheeled Motorized Travel Management EIS and ROD, and the Eldorado National Forest Travel Management SEIS ROD (June, 2014). The following documents prepared for this analysis are incorporated by reference:

Barrett 4wd Trail Reconstruction Project Hydrology Report
(Markman, Eldorado National Forest, March, 2014)

Riparian Conservation Objectives (RCO) Consistency Report, Barrett 4wd Trail Reconstruction Project (Markman, Eldorado National Forest, March, 2014)

Terrestrial Wildlife Biological Evaluation/Assessment, Barrett 4wd Trail Reconstruction Project
(Lipton, Eldorado National Forest, March, 2014)

Aquatic Species Biological Assessment and Evaluation, Barrett 4wd Trail Reconstruction Project
(Williams, Eldorado National Forest, March, 2014)

Management Indicator Species Report, Barrett 4wd Reconstruction Project
(Williams and Lipton, Eldorado National Forest, March, 2014)

Biological Assessment/Evaluation for Botanical Species, Barrett 4wd Trail Reconstruction Project (Brown, Eldorado National Forest, March, 2014)

Cultural Resource Management Report, Barrett 4wd Trail Reconstruction; R2104-05-03-50001
(Serin, Eldorado National Forest, February 2014)

Soil Conservation Plan, USDA Forest Service

(Eldorado National Forest, 2013)

Categorical Exclusion for Trail Maintenance Activities on the Pacific Ranger District, letter to the CA State Parks OHMVR Division Grant Project File
(Eldorado National Forest, May 2, 2013)

Environmental Consequences

Effects Relative to Finding of No Significance (FONSI) Elements

In 1978, the Council on Environmental Quality published regulations for implementing the National Environmental Policy Act (NEPA). These regulations (40 CFR Parts 1500-1508) include a definition of "significant" as used in NEPA. The ten elements of this definition are critical to reducing paperwork through use of a finding of no significant impact (FONSI) when an action would not have a significant effect on the human environment, and is therefore exempt from requirements to prepare an environmental impact statement (EIS). Significance as used in NEPA requires consideration of the following ten intensity factors in the appropriate context for that factor.

(1) Beneficial and adverse impacts.

Hydrology

The Barrett 4wd trail (16E21), approximately 5.0 miles in length, occurs in two HUC 7 watersheds in the Eldorado National Forest. The landscape of these two watersheds is mountainous and partially forested, with elevations ranging between 6,120 and 9,200 feet. Impacts from the Barrett 4wd trail have resulted in three meadows not meeting Standard and Guideline (S&G) #100 of the Sierra Nevada Forest Plan Amendment (SNFPA) of 2004.

Alternative 1

Three meadows (16E21-1, 16E21-5, and 16E21-6) would be brought into compliance with Standard & Guideline #100 of the 2004 Sierra Nevada Forest Plan Amendment, and such compliance would occur as soon as the corrective actions at the three meadows are implemented on-the-ground. The actions that would result in such compliance, the description of how such actions would result in compliance, and the applicable Best Management Practices (BMPs) and how those BMPs would be met, are described in the table in Appendix C.

Ground disturbance would occur in a number of aquatic features and their associated Riparian Conservation Areas (RCAs) as a result of actions that would bring three meadows (16E21-1, 16E21-5, and 16E21-6) into compliance with Standard and Guideline #100.

- A total of approximately 0.28 acres of permanent and temporary ground disturbance would occur within three meadows (16E21-1, 16E21-5, and 16E21-6). This ground disturbance corresponds to less than 4.5 percent of the area of any single meadow.

- There would be approximately 0.06 acres of permanent and temporary ground disturbance in the RCAs surrounding two meadows (16E21-1 and 16E21-6) as result of the construction of water bars/dips on the Barrett 4wd trail (16E21). This corresponds to less than 2.5 percent of the RCA surrounding these meadows.

- There would be approximately 0.08 acres of permanent and temporary ground disturbance in an ephemeral stream channel and its associated RCA as a result of the construction of the 0.27 mile re-route of the Barrett 4wd trail around meadow 16E21-5. This is approximately 0.5 percent of the RCA of the ephemeral stream.

- There would be approximately 0.20 acres of temporary ground disturbance in meadow 16E21-5 as a result of actions to rehabilitate the meadow. These actions include, but may not be limited to: removing the existing log structure and culvert, regrading of the trail to improve drainage, and scarifying and reseeding the trail.

Alternative 2

Three meadows (16E21-1, 16E21-5, and 16E21-6) would not be brought into compliance with Standard & Guideline #100 of the 2004 Sierra Nevada Forest Plan Amendment. This is because the actions to bring these meadows into compliance, as described in Table 2, would not occur. In addition, it is likely that additional degradation of the three meadows would occur. Specifically, runoff and sediment from the Barrett 4WD trail (16E21) would continue to reach the three meadows, which over a period of time would likely cause a larger portion of those meadows to become drier and have less meadow vegetation.

There would be no ground disturbance in three meadows (16E21-1, 16E21-5, and 16E21-6) or in the Riparian Conservation Areas (RCAs) surrounding these meadows. There would be no ground disturbance in the stream channel or the RCA adjacent to the stream channel associated with the 0.27 re-route of the Barrett 4wd trail 916E21) around meadow 16E21-5.

Aquatic Species

Alternative 1

A biological evaluation/biological assessment (Williams, 2014) was prepared to determine if the proposed project may affect any USDA Forest Service (FS) sensitive species and US Fish and Wildlife Service (USFWS) threatened, endangered, or proposed species and their designated or

proposed critical habitat. The project will have no effect on endangered species winter run chinook, on threatened species California red-legged frog and its critical habitat, Central Valley spring-run chinook, Central Valley steelhead, delta smelt or Lahontan cutthroat trout, or proposed species Yosemite Toad or its critical habitat.. It will have no effect on Forest Service sensitive species foothill yellow-legged frog, hardhead, northern leopard frog, Pacific lamprey, or western pond turtle.

The Sierra Nevada yellow-legged frog has recently been proposed as an endangered species, and the project occurs within the species range and within critical habitat proposed for the species. Sierra Nevada yellow-legged frogs inhabit high elevation low-gradient streams and small ponds. Past sightings have occurred in the watershed. The Barrett Lake 4WD Trail Reconstruction Project will not affect the Sierra Nevada yellow-legged frog and will not affect its proposed critical habitat for reasons described in the following discussion.

There have been past sightings of SNYLFs in the headwaters of Jones Fork Silver Creek at Gertrude Lake and at a small lake between and west of Maud Lake and Gertrude Lake. These are located 2.5 to 3 miles from the Barrett 4wd Trail, upstream from the bridge crossing at Jones Fork Silver Creek. Surveys within 200 meters of the jeep trail in 2012 by the aquatic biologist and by the fisheries crew on September 30 and October 3, did not find any SNYLF. Jones Fork Silver Creek was mostly dry, with some isolated pools of water every 100 feet or so, indicating that Jones Fork Silver Creek can be considered dispersal habitat for SNYLF, but not reproductive habitat. A bridge has recently been built for the trail crossing of Jones Fork Silver Creek, which eliminates impacts to SNYLF habitat associated with this trail crossing.

There is a small pond near the beginning of the trail on the west side, but surveys did not detect aquatic species. This pond could provide occasional habitat but likely dries up in dry years. The only other body of water was Barrett Lake itself, which has brook trout, and is therefore unlikely to support SNYLFs. Even if it did have SNYLFs, which is unlikely, the trail was not affecting the lake and not within close enough distance for SNYLFs to become crushed by vehicles.

The three meadows where the Barrett 4wd Trail reconstruction work is planned and the associated ephemeral crossings are not considered reproductive or dispersal habitat for SNYLF, as they are either moist or dry during the summer, but not with standing water of significant depth for breeding or dispersal habitat. The meadows would not be used as dispersal habitat as they are too distant from a perennial water body that would support breeding SNYLFs. The ephemeral channels, when flowing during the wet period, could allow sediment to flow downstream to dispersal habitat, such as Jones Fork Silver Creek, if the sedimentation produced was significant. The reconstruction is designed to reduce sedimentation and to harden the ephemeral crossings, such that sedimentation downstream would be very minimal. The new reroute has one ephemeral channel which would be hardened, so that vehicles driving over the crossing should not cause sedimentation. Best Management Practices will be used to ensure sedimentation is very minor.

Sierra Nevada yellow-legged frogs are known to appear absent from the smallest creeks, probably because these creeks have insufficient depth for adequate refuge and overwintering habitat (Jennings and Hayes 1994 and USFWS 2013a). Since there are no perennial or intermittent aquatic features affected by the Barrett 4wd trail, use and maintenance activities along the trail would not have direct effects upon SNYLF. The maintenance activities would ensure that ephemeral crossings and drainage features are reinforced and hardened such that sedimentation to the channel would be very minimal. Thus, construction activities and the use of the trail across the several ephemeral drainages and drainage features are not expected to pass any more than very minimal amounts of sediment downstream during the wet season, and avoid direct, indirect, or cumulative effects to the Sierra Nevada yellow-legged frog. The Barrett 4wd Reconstruction project will not affect the Sierra Nevada yellow-legged frog.

Critical Habitat

The Barrett Lake 4WD jeep trail is within SNYLF proposed critical habitat. The primary constituent elements of critical habitat to be considered are:

1) *Aquatic habitat for breeding and rearing that is permanent or close to permanent water bodies.*

   As mentioned in the Direct and Indirect Effects section above, the only permanent water body is Barrett Lake itself, which has brook trout, thus not considered a constituent element of critical habitat. The trail is not affecting aquatic habitat at the lake. Jones Fork Silver Creek is an intermittent stream during the summer, and is considered dispersal habitat and not breeding or rearing habitat. Surveys did not observe SNYLF within 200 meters of the bridge crossing. There is a bridge crossing at the creek, and there are not expected to be effects to the channel or aquatic habitat.

2) *Aquatic non-breeding habitat (including overwintering habitat) providing for shelter, foraging, predator avoidance and aquatic dispersal. It may contain the same characteristics as aquatic breeding and rearing habitat that may not hold water long enough for the species to complete its life cycle.*

   Jones Fork Silver Creek is potential aquatic non-breeding habitat and overwintering habitat. There is a bridge crossing at the creek, where there should be no effects to the channel or aquatic habitat. Maintenance will identify any potential sedimentation areas for repair, thus impacts to aquatic non-breeding habitat at Jones Fork Silver Creek are not expected.

   The ephemeral streams crossed by the Barrett 4wd trail do not provide non-breeding habitat as they are more than two miles from breeding habitat, and have insufficient water depth for adequate refuge and overwintering habitat According the USFWS, non-breeding habitat "may contain the same characteristics as aquatic breeding and rearing habitat (often at the same locale), and may include lakes, ponds, tarns, streams, rivers, creeks, plunge pools

within intermittent creeks, seeps, and springs that may not hold water long enough for the species to complete its aquatic life cycle" (USFWS 2013a). Barrett Lake 4WD Trail is opened seasonally when spring maintenance is completed and the District Ranger determines that the trail is in a condition to prevent resource damage, usually in mid-July. The gate is closed in the fall when heavy rain or snow create conditions that could lead to resource damage. During this time in most water years, the ephemeral streams would have little to no flow.

3) *Upland areas that provide for feeding or movement up to 25 meters from the bank or shoreline having a canopy overstory that is sufficiently thin and generally not to exceed 85% canopy to allow sunlight to reach the aquatic habitat for basking areas*.

   Upland areas from Jones Fork Silver Creek would not be affected by the 4wd trail at the bridge crossing. Maintenance will identify any potential sedimentation areas for repair, thus impacts to upland areas are not expected.

According to USDI (2013a), the following actions could cause effects to SNYLF proposed critical habitat:

1) *<u>Actions that significantly alter water chemistry or temperature.</u>*
Water chemistry can be affected by pollution from petroleum spills at the natural crossings: Vehicles and motorcycles have the potential to leak or spill petroleum at the stream crossings (without bridges), particularly on perennial crossings.

   Jones Fork Silver Creek crossing is a bridge, therefore unlikely to have leaking from vehicles into the stream channel. The ephemeral stream crossings are usually dry during trail use and will be hardened by maintenance activities. If a vehicle leaks onto the ephemeral channels, it is unlikely for the oil products to enter the intermittent channel downstream until winter runoff when flushing flows would dilute spots of spilled oil on the rocks.

   Water temperature is not affected by this project.

2) *<u>Actions that would significantly increase sediment deposition within the stream channel, lake, or other aquatic feature, or disturb riparian foraging and dispersal habitat.</u>*
Runoff from trail surfaces can be a source of sedimentation and stream turbidity that can affect stream habitat where SNYLF reside. Continual daily use of trails by the various public users can cause loss of stream banks at raw crossings, loss of plant cover, increase in bare ground, soil compaction, and erosion. Changes in substrate morphology could potentially influence in-stream primary production and macroinvertebrate assemblages. Additionally, fine-grained sediment may envelop egg masses, affecting herpetofauna reproduction.

This project is designed to decrease sediment deposition into ephemeral stream channels and meadows by improving trails through meadows and by trail maintenance.

3) *Actions that would significantly alter channel or lake morphology, geometry, or water availability.*
Impacts that increase with increased trail use are trail widening, direct displacement of soil (especially if the soil is wet), and deterioration of water diversion structures, such as water bars. Ruts and gullies in trails capture runoff and sediment from downcutting and deliver concentrated flow to a streamcourse.

   Trail maintenance and reconstruction at the three meadow sections will ensure that use of the Barrett Lake 4WD jeep trail maintains drainage structures and ephemeral channels where water would be carried down and off the trail.

4) *Actions that significantly reduce or limit the availability of breeding or overwintering aquatic habitat for the Sierra Nevada yellow-legged frog.*
SNYLFs are affected by disturbance to aquatic or riparian terrestrial habitats. They exhibit high habitat specificity, remaining in the same location year after year. Therefore, roads that cause erosional features at stream courses affect all life stages within the vicinity of that travel route.

   Breeding and overwintering habitat of SNYLF is not affected by this project.

The Barrett 4wd Trail Reconstruction project will not affect proposed critical habitat for the Sierra Nevada yellow-legged frog.

Alternative 2

Three meadows (16E21-1, 16E21-5, and 16E21-6) would not be brought into compliance with Standard & Guideline #100 of the 2004 Sierra Nevada Forest Plan Amendment because the actions to bring these meadows into compliance would not occur; therefore it is likely that additional degradation of the three meadows would occur. The 0.27 re-route of the Barrett 4wd trail 916E21) around meadow 16E21-5 would not occur, therefore the meadow would continue to degrade with sedimentation. Specifically, runoff and sediment from the Barrett 4WD trail (16E21) would continue to reach the three meadows, which over a period of time would likely cause a larger portion of those meadows to become drier and have less meadow vegetation.

Trail maintenance would not occur. Downstream sediment movement from trail drainage during spring runoff would continue. It is possible that this sedimentation could reach Jones Fork Silver Creek, dispersal habitat for SNYLF.

Terrestrial Wildlife

Alternative 1

A biological evaluation/biological assessment (Lipton, 2014) was prepared to determine if the proposed project may affect any USDA Forest Service (FS) sensitive species and US Fish and Wildlife Service (USFWS) threatened, endangered, or proposed species and their designated or proposed critical habitat. The following discussion summarizes effects to these species.

The Barrett 4wd Trail Reconstruction Project will not affect terrestrial wildlife species that are Federally listed or proposed for listing as threatened or endangered. The project may affect individuals but is not likely to result in a loss of viability or trend toward federal listing of the following Forest Service Sensitive Species: California spotted owl and northern goshawk.

California spotted owl Protected Activity Centers do not occur in proximity to the Barrett Trail reconstruction work, and spotted owl habitat would not be altered by project activities. Helicopter load staging sites A and B are adjacent to spotted owl Protected Activity Center ELD102, however, and disturbance could occur to spotted owls roosting in the vicinity. The most recent nest site location is from 1992, and occurs more than a half mile from the load staging site. Surveys conducted in 2010 did not locate spotted owls in ELD102, so their current status is unknown. In the absence of more recent surveys, it's assumed that helicopter use at staging area A or B could cause disturbance to a nest or roost location. The timing of staging and helicopter activities between March 1 and August 15 at staging areas A and B could result in breeding disturbance and loss of current year reproduction for spotted owls nesting near this location.

To avoid the potential for disturbance and loss of spotted owl breeding success, limits on the time period for helicopter staging material staging from staging areas A and B have been incorporated into the proposed action Design Criteria and Mitigation.

Goshawk Protected Activity Centers do not occur in proximity to the Barrett Trail reconstruction work, and goshawk habitat would not be altered by project activities. Helicopter load staging area A occurs within Goshawk protected activity center T20-02, and both staging areas A and B are within a quarter mile of past goshawk nest locations. The timing of staging and helicopter activities between February 15 and September 15 at staging areas A and B, could result in breeding disturbance and loss of current year reproduction for goshawks nesting in this location.

To avoid the potential for disturbance and loss of goshawk breeding success, limits on the time period for helicopter staging material staging from staging areas A and B have been incorporated into the proposed action Design Criteria and Mitigation.

The Barrett 4wd Trail Reconstruction project will not affect other Forest Service designated Sensitive species.. Project activities involve minor alteration of wildlife habitat. The availability of fisher, marten or wolverine habitat would be unaffected by the proposed project. Beneficial effects will result from project actions that recover hydrologic function, which, over time, may improve meadow vegetation allow the meadow to support higher densities of small mammal prey for marten and great gray owls, and provide a wetter environment supporting higher numbers of invertebrate prey within potential willow flycatcher habitats. Indirect beneficial effects for bats would result from healthier meadow vegetation with potential to support higher levels of invertebrates in the future as hydrologic function of meadows is improved.

Improvement to overall meadow vegetation is expected to be the greatest at meadow 16E21-5 since the Barrett Jeep trail will be rerouted out of the meadow. Proposed trail reconstruction at the other two meadows will likely maintain meadow vegetation composition and vigor in its current state, preventing further degradation from the trail.

Alternative 2

Restoration would not be performed and runoff and sediment from the Barrett 4WD trail (16E21) would continue to reach the three meadows currently being affected by the trail. Over a period of time this would likely cause a larger portion of those meadows to become drier and have less meadow vegetation, which, in turn, would diminish the quality of meadow habitat for wildlife, including sensitive species that are associated with meadows, such as marten, willow flycatchers, and great gray owls. .Over time there would be some recovery of native vegetation along the trail corridor which would eventually lessen the magnitude of impact to meadow hydrology and vegetation.

Botanical Resources

A biological evaluation/biological assessment (Brown, 2014) was prepared to determine if the proposed project may affect any USDA Forest Service (FS) sensitive species and US Fish and Wildlife Service (USFWS) threatened, endangered, or proposed species and their designated or proposed critical habitat. Also included in the document is a botany report describing the effects of the proposed project on watch list plant taxa, special interest plant communities and other botanical resources and a noxious weed risk assessment.

There are no plant taxa listed or proposed for listing as Threatened or Endangered, and no Sensitive plant taxa known to occur in the analysis area. Marginal potential habitat for ten Sensitive species occurs within two of the three meadows in the Barrett 4wd trail reconstruction project but these species were not found during past and recent botanical surveys.

Alternative 1

Negative effects of the proposed project are not expected for TES plants since no known populations have been found in the project area. Some potential habitat for sensitive plant species occurs in the Barrett 4wd Trail Reconstruction project area but occurrences were not found during recent surveys in 2012. Meadow 16E21-1 has limited potential habitat for Sensitive species due to the sediment plume within the small meadow. Meadow 16E21-5 and 16E21-6 both have only marginal potential habitat for sensitive plant species associated with meadow communities. The proposed reroute at meadow 16E21-5 would likely improve habitat suitability for sensitive plant species. Fixes at meadow 16E21-6 are also likely improve habitat quality although it is difficult to quantify the expected benefits for sensitive plant species, since little is known about the likelihood of rare bryophytes and botrychium species becoming established after improvements in habitat condition occur.

Some suitable habitat exists for Forest Service sensitive species *Botrychium ascendens*, *Botrychium crenulatum*, *Botrychium lunaria*, *Botrychium minganense*, *Botrychium montanum*, *Botrychium paradoxum*, *Botrychium pedunculosum*, *Bruchia bolanderi*, *Lewisia* kelloggii ssp. *hutchinsonii*, and *Lewisia* kelloggii ssp. *kelloggii*, but occurrences were not found during past or recent surveys. While possible, the potential for effects to undiscovered populations is relatively remote given the limited scope of the proposed trail reconstruction. However, if new occurrences are found during project implementation the project botanist would be contacted and necessary mitigations developed to limit impacts to newly discovered sensitive plant species.

A number of plant species do not meet all of the criteria to be included on the Regional Forester's Sensitive Plant List, but are of sufficient concern that we need to consider them in the planning process. These include species that are locally rare – as opposed to declining throughout their range – are of public concern, occur as disjunct populations, are newly described taxa, or lack sufficient information on population size, threats, trend or distribution. Effects to watch list plant taxa, and other botanical resource in the project area were considered in the Botany Report, Appendix A of the BE/BA (Brown 2014). Current ENF GIS data, CNDDB records, and 2013 rare plant survey results for the Barrett 4wd trail reconstruction project were reviewed for this analysis. The only watch list species with potential habitat in the project area are *Botrychium simplex*, and *Silene invisa*, neither of which have been found in the project area.

There are some expected beneficial effects to meadow vegetation from the proposed project. Meadow vegetation at 16E21-1 will likely improve after removing the sediment plume, replanting native vegetation, and fixing drainage issues along the trail. Improvement to overall meadow vegetation is expected to be the greatest at meadow 16E21-5 since the Barrett Jeep trail will be rerouted out of the meadow. Proposed trail reconstruction at meadow 16E21-6 will keep the trail in place within the meadow while addressing drainage issues and reinforcing the three ephemeral

channel crossings. These proposed activities will likely maintain meadow vegetation composition and vigor in its current state, potentially avoiding further degradation from the trail. However, without additional restoration actions to correct impacts from the combination of past grazing and trail use, it is unlikely that the proposed reconstruction activities will result drastic improvements to portions of the meadow vegetation that are currently in a degraded state.

The only known invasive plants within the project area are cheat grass *(Bromus tectorum)* and mullein *(Verbascum thapsus)* both of which were observed at Meadow 16E21-5. There are no documented infestations at any of the proposed staging areas; however, none of the proposed locations were surveyed for this project. Given the use of proposed landings it is expected that these sites will host a mix of common invasive species including, cheat grass *(Bromus tectorum),* bull thistle *(Cirsium vulgare),* Klamath weed *(Hypericum perforatum),* and *mullein (Verbascum thapsus).*

The proposed trail reconstruction activities along the Barrett 4wd trail are relatively limited in scope and are not expected to drastically alter native vegetation in the project area. Additionally, much of the native vegetation along the trail is robust, free of invasive species, and resilient to large scale invasion (excluding the actual trail tread and disturbance corridor). Outside of the proposed trail reconstruction activities, there is some risk for invasive species introduction (4wd vehicles, hikers, equestrians) which is expected to persist in the project area once reconstruction activities are completed. For the Barrett 4wd trail reconstruction project, insuring the equipment and materials brought into the project area are weed-free and planting native vegetation as a part of trail reconstruction activities are critical for reducing the risk of invasive species establishing in the project area. While these measures are largely effective they cannot guarantee that invasive species are not inadvertently introduced during project activities so post construction monitoring should also be conducted to insure design features were effective.

Alternative 2

Under alternative 2, no work would be done on the Barrett Lake 4wd trail, and the route would not be reopened to public motor vehicle use. If the trail is no longer open to public motor vehicle use there would be a partial reduction in potential invasive species introduction due to exclusion of vehicle traffic. However, continued use of the trail by hikers and equestrians could still potentially vector invasive species along the trail. There would be some recovery of native vegetation along the trail corridor but since the trail will be still accessible to hikers and equestrians it is likely to continue to have limited impacts on meadow vegetation and serve as a potential corridor for invasive species to establish and spread.

(2) The degree to which the proposed action affects public health or safety.

The trail improvements and reroute would be designed and constructed to Region 5 Forest Service Standards to meet all safety standards for the anticipated use. The improvements and reroute are not expected to change the level or type of use by the public, therefore, would not change safety risk.

The route would remain closed during construction. A project Aviation Plan will be prepared for Helicopter operations. Temporary traffic control for staging areas shall meet all requirements as stated in the Manual on Uniform Traffic Control Devices (MUTCD). Any helicopter use would be scheduled mid-week or after Labor Day when the amount of recreation use in the Wrights Lake area is lower. Flight paths would avoid the Wrights lake recreation area and the Dark Lake and Wrights Lake Recreation Residence tracts to minimize any safety risk to the public.

(3) Unique characteristics of the geographic area.

The proposed action is located within the Pyramid Inventoried Roadless Area (IRA). The following features are common characteristics in IRA's:

- High quality or undisturbed soil, water, and air;
- Sources of public drinking water;
- Diversity of plant and animal communities;
- Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land;
- Primitive, Semi-Primitive Non- Motorized, and Semi-Primitive Motorized recreation opportunities;
- Reference landscapes;
- Natural appearing landscapes with high scenic quality;
- Traditional cultural properties and sacred sites;
- Other locally identified unique characteristics.

(36 CFR 294)

The Barrett Lake 4WD Trail was an established use at the time the IRA was delineated and the proposed project is not expected to change the above listed characteristics of the area. The trail improvements and reroute are expected to reduce potential impacts of the route on meadows. The improvements will be designed to blend in with the surrounding landscape as much as possible. Restoration of the abandoned trail segment at Meadow 16E21-5 will lead to the re-establishment of native vegetation. The proposed project area is not in the proximity to any parklands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas, therefore none would be impacted.

(4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

The proposed action is not considered to be highly controversial, as evidenced in the supportive nature of the scoping comments received.

(5) Degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

The effects on the human environment from the proposed alternative are not uncertain and do not involve unique or unknown risks. The proposed action is similar in type and scope to many projects on the Eldorado National Forest. Effects from this type of project are well known to the interdisciplinary team members.

(6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

The Barrett 4wd Trail Reconstruction represents a site-specific project that does not set precedence for future actions or present a decision in principle about future considerations. The project does not change the character of the Pyramid Inventoried Roadless Area and would not preclude any future actions related to the IRA. Any proposed future project must be evaluated on its own merits and effects.

(7) Whether this action is related to other actions with individually insignificant but cumulatively significant impacts

Hydrology

The method of assessing the risk of Cumulative Watershed Effects (CWE) in the Eldorado National Forest is the method of Equivalent Roaded Acres (ERA). This method quantitatively evaluates all land disturbances in a HUC 7 watershed – past, present, and reasonably foreseeable – and assigns the watershed to one of the following risk categories: low, moderate, high, or very high. The watersheds that contain the Barrett 4wd Trail Reconstruction Project (BTRP) are shown in Appendix D. The two watersheds that contain the BTRP are currently at a low risk of CWE. This is because land disturbances in these watersheds are mostly confined to a relatively small number of roads, trails, buildings, and their associated parking areas. More than 38 percent if each watershed is within Desolation Wilderness, where allowable land disturbances are quite restricted.

None of the alternatives change the risk of cumulative watershed effects (CWE) in the two HUC 7 watersheds that contain the BTRP (see Appendix D). This is because the amount of ground disturbance that would result from the BTRP – less 0.01 percent equivalent roaded acres - is

negligible and far less than the 0.1 percent resolution of the ERA model at the HUC 7 watershed scale.

Terrestrial Wildlife

Ongoing and future management activities in the Barrett 4wd trail reconstruction project area would include trail maintenance and hazard tree removal and continued public use of the Barrett 4wd trail. Human disturbance associated with recreation use, combined with the effects of the project, would not result in cumulatively significant effects to terrestrial wildlife species. The effects of the Barrett 4wd Trail Reconstruction project are localized in nature, would alter minimal amounts of wildlife habitat, and would result in overall benefits to important wildlife habitats (meadows) within the project area.

Aquatic Resources

The table below shows the miles of stream that could provide suitable habitat for Sierra Nevada yellow-legged frogs and be considered as a baseline level of habitat that the analysis area could provide under optimum conditions. This baseline is based on potential areas that meet the habitat requirements for Sierra Nevada yellow-legged frogs. A threshold level, below which species viability within the analysis area would be at risk, would not be reached under either alternative in this EA.

Table: Potential and occupied Sierra Nevada yellow-legged frog habitat in the Barrett 4WD jeep trail reconstruction project on National Forest lands.

Analysis Area/Size	Potential stream or lake habitat based on elevation	Miles of Occupied Habitat occurring within the analysis area
0.25 miles of intermittent stream and 8 acres lake	0.25 miles of intermittent stream and 8 acres lake	0 miles of occupied stream or 0 acres occupied lake

Botanical Resources

Alternative 1

Adverse impacts to sensitive plants from recent (1989-2011) activities have largely been minimized by the use of mitigation measures, mainly the use project specific plant surveys and avoidance of known occurrences. Ongoing and future management activities in the Barrett 4wd trail reconstruction project area would likely include trail maintenance and hazard tree removal. It is anticipated that future impacts to sensitive plants would continue to be minimized through the use of avoidance for the above foreseeable actions. Avoidance or other means of mitigating impacts to

sensitive plant occurrences is consistent with direction contained in in the ENF LMRP, which includes under Standard And Guideline 49 (p. 4-91), "provide for the protection and habitat needs of sensitive plants so that Forest activities would not jeopardize the continued existence of such species.".

Alternative 2

Minor improvements in habitat quality may occur within the project area but without the active restoration included in the proposed action meadow vegetation at the three project locations will likely continue to exhibit reduced vigor.

(8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

This project complies with Section 106 of the National Historic Preservation Act of 1966, as amended in accordance with provisions of the Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region (Region 5), the California State Historic Preservation Officer, the Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forest of the Pacific Southwest Region (Regional PA 2013). The proposed actions have the potential to maintain integrity of historic setting, stabilize surface and subsurface deposits of cultural resources, and reduce disturbances caused by motor vehicles driving into cultural resource sites adjacent to the trail, thus resulting in beneficial indirect effects.

(9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

Biological Assessment/Evaluations (BA/BE) were prepared for wildlife, aquatic and botanical species listed or proposed for listing as Threatened or Endangered.

Aquatic and Terrestrial Wildlife Species:

The project occurs within the range of the wolverine and the Sierra Nevada yellow-legged, which are species proposed for listing as threatened and endangered under the Endangered Species Act. Analysis shows that this project will 1) not affect the wolverine; and 2) not affect the Sierra Nevada yellow-legged frog and will not affect its proposed Critical Habitat.

Although the project occurs within Critical Habitat proposed for the Sierra Nevada yellow-legged frog, analysis shows that project activities would not alter the primary constituent elements of its Critical Habitat.

Botanical Species:

This project will not affect threatened, endangered, or proposed plant species. There is no potential habitat for listed species within the Barrett 4wd trail project area.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The proposed action was developed in accordance with and, therefore, does not threaten to violate any Federal, State or local laws or requirements for the protection of the environmental (i.e. Endangered Species Act, National Historic Preservation Act, Clean Water Act, Clean Air Act, Barrett Bridge and Reroute Project -2011 10 National Forest Management Act). Discussion in the EA of effects and the related references in the project file document that this project will not adversely affect soils, water quality, or threatened or endangered species. The proposed action is also consistent with the Eldorado National Forest Land and Resources Management Plan (1989) as amended by the Sierra Nevada Forest Plan Amendment (2004).

AGENCIES AND PERSONS CONSULTED

California State Parks, Off-Highway Motorized Vehicle Division
Eldorado County
Amador County
Alpine County
Washoe Tribe of Nevada and California
Jacquelyne Theisen
Bob Clark
Lawrence Calkins, Nevada 4wd Assn
Amy Granat, CORVA
Rusty Folena, Rubicon Trails Foundation
Donald Spuhler
Douglas Barr
Karen Shambach
Joseph Sand

INDEX OF APPENDICES

Appendix A – Public Scoping Comments

No.	*Comment*	*Commenter number*	*Response*
1	We strongly support the project	6,3,1	No response required
2	If any public on-site visits are planned I request they be scheduled for the earliest possible date and that the date and time be made available to at a minimum, all appellants.	4	Interested parties will receive notice of any public site visits that are planned
3	We support the concept of the reroute for 16E21-5, if necessary, but would like to see one last on-the-ground evaluation of improvements on the existing route.	3	Alternatives for Meadow 16E21-5 were explored by the ID Team during several site visits during the Summer and Fall of 2013. A reroute around Meadow 16E21-5 was determined to be the best solution at that location.
4	We request that both a detailed photo and work hour log be kept for all work done. These logs should be used to determine best practices for other routes in the El Dorado as well as for long-term monitoring and potential legal challenges.	3	Photos will be taken and logs kept during construction
5	Since mitigation work for Meadows 16E21-5 and 16E21-6 may take longer, consider doing the work for 16E21-1 first so that part of the route can be reopened	1	A contingency has been added in the Implementation section of Alternative 1, the Proposed Action, providing for completion of the work at Meadow 16E21-1 first.

6	The Hi-Landers and other interest 4wd clubs are looking forward to completing the Barrett 4wd Trail Reconstruction Project. We wish to get started on this project as soon as possible and look forward to setting up dates when this plan can get started.	2	A section on Implementation including the proposed timeline has been included in Alternative 1, the Proposed Action. The timeline is influenced by required timeframes for pre-decisional administrative review as well as implementation requirements for resource protection.
7	It is our desire that these improvements be made as early as possible I the summer of 2014 so that the trail may be open to the public by August 1, 2014, if the normal route condition requirements are met to lift the seasonal closure.	3	
8	I would like to see some form of timeline leading towards an opening date.	4	
9	As a long time user of the Barrett Trail, I would like to learn more about how and when I can volunteer during the reconstruction phase	5	Parties that have expressed an interest in volunteering will be contacted this summer to assist with various aspects of the trail reconstruction project and maintenance work along the trail
10	Purpose and need are too narrowly defined	7	According to FSH 1909.15 - National Environmental Policy Act Handbook, Chap 10, The need for action discussed the relationship between the desired condition and the existing condition in order to answer the question, "why consider taking any action?" The purpose and need as stated focuses on the reason for doing this Environmental Assessment.
11	Extraordinary circumstances require that an Environmental Assessment be prepared	7	An Environmental Assessment has been prepared.

12	Impacts to water quality at stream crossings must be corrected	7	In addition to addressing impacts to water quality at stream crossings through corrective actions at the three meadows, additional trail maintenance work is planned along the Barrett 4wd Trail as described on page 8 of the Environmental Assessment
13	Forest Service must comply with its Water Quality Management Handbook, including implementation and monitoring of all applicable BMPs	7	Implementation and monitoring of BMP's is addressed in detail in the Hydrology Report and in the Environmental Assessment, pages 11 - 12 and Appendix C
14	The TM SEIS Settlement agreement called for a detailed corrective action plan for the 18 routes including a cost benefit analysis. The plan has not been released yet. Is Barrett 4wd Reconstruction Project a top priority?	7	Barrett 4wd Trail is in the top priority tier of the ENF 18 Route Corrective Action Plan
15	Proper design and construction of reroutes, rolling dips and other proposed trail structures must be ensured.	7	Trail reroutes, rolling dips and other proposed trail structures will be designed in accordance with all current standards as indicated on page 8 of the Environmental Assessment
16	All alternatives should include requirements for regularly maintaining the reroute and repair structures if the route is to remain open.	7	A section has been added to Alternative 1 on page 7 addressing monitoring and maintaining the reroute and repair structures
17	The presence of habitat for the Sierra Nevada yellow-legged frog requires additional analysis of impacts to the species and the proposed critical habitat from any proposed construction and from operations of motorized vehicles on this trail. The Forest Service must confer with the USFWS regarding such impacts.	7	Potential impacts to SNYLF and habitat have been addressed in the Aquatic Species BE/BA as well as in the Environmental Assessment

18	The analysis must include a full range of alternatives including an alternative that closes the route permanently and restores the meadows and other natural features fully.	7	Under CEQ regulations, the Agency is required to: Study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources. Reasonable alternatives to the proposed action should fulfill the purpose and need and address unresolved conflicts related to the proposed action. The alternative suggested, to close the route permanently and restore the meadows and other natural features fully, does not fulfill the purpose and need to analyze and implement corrective actions for the Barrett Lake 4wd Trail to comply with the 2004 Sierra Nevada Forest Plan Amendment, Riparian Conservation Objectives S&G 100, as it pertains to meadows on the Eldorado National Forest prior to adding the route back onto the Eldorado National Forest Motor Vehicle Use Map as part of the system of routes designated for motor vehicle use. (FSH 1909.15, Chapter 10).
19	The Forest service must consider the full cost of designing, constructing, maintaining and monitoring the proposed project including the needed environmental protections so that it can fairly compare those costs to other alternatives including closure and restoration.	7	The Forest Service is considering the costs of designing, maintaining and monitoring the proposed project including environmental protections.

Appendix B – List of Persons Providing Scoping Comments

1	1/7/2014	Norma Santiago	Chair, El Dorado County Board of Supervisors	330 Fair Lane; Placerville, CA 95667
2	1/13/2013	Lyle Hobart	Hi-Landers 4wd Club	PO Box 291; Citrus Heights, CA 95611-0291
3	1/15/2013	Jim Bramham	California Association of 4-Wheel Drive Clubs (CA4WDC)	117 Otto Circle; Sacramento, CA 95822
4	1/17/2013	Joseph Sand and Amy Granat	Specialized 4wd Inc.; CORVA Managing Director	PO Box 298; Clarksburg, CA 95612
5	1/7/2013	Marc Reynolds		Marc Reynolds
6	1/9/2013	Don Amador	Blue Ribbon Coalition	555 Honey Lane; Oakley, CA 94561
7	1/15/2013	Karen Schambach and Lisa Belenky	Center for Sierra Nevada Conservation; Center for Biological Diversity	PO Box 603; Georgetown, CA 95634; 351 California St., Suite 600; San Francisco, CA 94104

Appendix C: Summary of Actions under Alternative 1 (Proposed Action) and Applicable BMPs

	Actions that would occur Alternative 1 (Proposed Action)	How Standard &Guideline #100 would be met as a result of actions under Alternative 1 (Proposed Action)	Applicable Best Management Practices (BMPs) and how the BMPs would be met under Alternative 1 (Proposed Action)[1]
Meadow 16E21-1	▪ Installation of approximately two rolling dips in trail 16E21 just uphill of the meadow. ▪ The existing plume of sediment in the meadow would be removed with hand tools. The area would be re-vegetated as needed with native meadow species.	▪ Most of the runoff and sediment from the trail would be diverted off of the trail before reaching the meadow. ▪ The area in the meadow currently covered with sediment will return to native meadow vegetation.	BMP 4.7.2 (Trail location and design) ▪ Trail 16E21 does not cross the meadow, but borders a steep bedrock outcrop meadow at the very edge of the meadow. ▪ The installation of approx. two rolling dips in trail 16E21 just uphill of the meadow will remove most of the runoff and sediment from the trail before reaching the meadow. BMP 4.7.3 (Trail watercourse crossings) ▪ There are no watercourse crossings of the segment of the trail adjacent to the meadow. BMP 4.7.4 (Trail construction & reconstruction) ▪ The existing plume of sediment in the meadow would be removed with hand tools, and the area would be re-vegetated as needed with native meadow species. BMP 4.7.5 (Monitoring) ▪ The segment of trail 16E21 next to the meadow would be visually inspected at least once per year for a period of five years for maintenance needs.
Meadow 16E21-5	▪ A 0.27 mile re-route of trail 16E21 would be constructed to the east of the existing trail. ▪ The trail re-route would cross one ephemeral stream. The approaches to the stream crossing would be hardened as described in Alternative 1 (Proposed Action). ▪ The original segment of the trail through meadow 16E21-5 would be rehabilitated by removing the existing log structure and culvert, regrading of the trail to improve drainage, and scarifying and reseeding the trail.	▪ The re-routed segment of the trail would be located more than 200 feet from any aquatic feature, with the exception of one ephemeral stream crossing. ▪ The crossing of the one ephemeral stream by the 0.27 trail re-route would result in minor degradation to the stream because the stream channel at the crossing is mostly rock and the approaches to the crossing will be hardened as described in Alterative 1 (Proposed Action).	BMP 4.7.2 (Trail location and design) ▪ A 0.27 mile re-route of trail 16E21 would be constructed to the east of the existing trail. This re-route avoids all aquatic features, with the exception of one ephemeral stream. BMP 4.7.3 (Trail watercourse crossings) ▪ The trail re-route would cross only one stream, an ephemeral stream channel. The ephemeral stream at the trail crossing is mostly rock and the approaches to the crossing will be hardened as described in Alterative 1 (Proposed Action). BMP 4.7.4 (Trail construction & reconstruction) ▪ The construction of the new is trail includes measures to minimize ground disturbance and reduce erosion as described in Alternative A (Proposed Action). BMP 4.7.5 (Monitoring) ▪ The trail re-route would be visually inspected at least once per year for a period of five years for maintenance needs.

[1] The complete text of all applicable BMPs can be found in the 2011 Water Quality Management Handbook (Region 5, USDA).

Appendix C (continued). Summary of actions under Alternative 1 (Proposed Action) and Applicable BMPs

	Actions that would occur Alternative 1 (Proposed Action)	How Standard &Guideline #100 would be met as a result of actions under Alternative 1 (Proposed Action)	Applicable Best Management Practices (BMPs) and how the BMPs would be met under Alternative 1 (Proposed Action)[1]
Meadow 16E21-6	▪ Installation of rolling dips in trail 16E21 as the trail approaches the north and south edges of the meadow. ▪ The trail approaches to the three stream channel crossings in the meadow would be hardened with one or more of the methods described in Alternative 1 (Proposed Action).	▪ Much of the runoff and sediment from trail 16E21 would be diverted off of the trail before reaching the meadow. ▪ There would be a large reduction in the amount of sediment from the segment of the trail through the meadow into the meadow and the three ephemeral streams cross the trail in the meadow.	BMP 4.7.2 (Trail location and design) ▪ Trail 16E21 crosses the eastern edge of the meadow. Re-routing of the segment of the trail out of the meadow would have crossed a number streams, and at least one of the stream channel crossing in each potential trail re-route was considered unstable and subject to excessive channel erosion. ▪ The installation of rolling dips in trail 16E21 as the trail approaches the meadow will remove most of the runoff and sediment from the trail before reaching the meadow. BMP 4.7.3 (Trail watercourse crossings) ▪ The approaches to the three stream channel crossings would be hardened with one or more of the methods described in Alternative 1 (Proposed Action). This is expected to minimize the amount of erosion of sediment from the trail into the meadow and the three streams. BMP 4.7.4 (Trail construction & reconstruction) ▪ The construction of the new is trail includes measures to minimize ground disturbance and reduce erosion as described in Alternative A (Proposed Action). BMP 4.7.5 (Monitoring) ▪ The segment of trail 16E21 through meadow and near the meadow would be visually inspected at least once per year for a period of five years for maintenance needs.

[1] The complete text of all applicable BMPs can be found in the Water Quality Management Handbook (USDA 2011).

Appendix D: Cumulative Watershed Effects

Risk of cumulative watershed effects (CWE) in the two HUC 7 watersheds that contain the Barrett 4wd Trail Reconstruction.[1,2,3,4,5]

				ERA in 2014 - expressed as a percent of the TOC	
Watershed (HUC 7)	**ENF Number**	**Total watershed Acres**	**Risk of CWE in 201 - all alternatives**	**Alt. 1 (Proposed Action)**	**Alt. 2 (No Action)**
Barrett Creek	3655	5232	Low	3.3	3.3
Upper Jones Fork Silver Creek	3625	6125	Low	12.0	12.0

[1] CWE = Cumulative Watershed Effects. ERA = Equivalent Roaded Acres. ENF = Eldorado National Forest. TOC = Threshold of Concern.

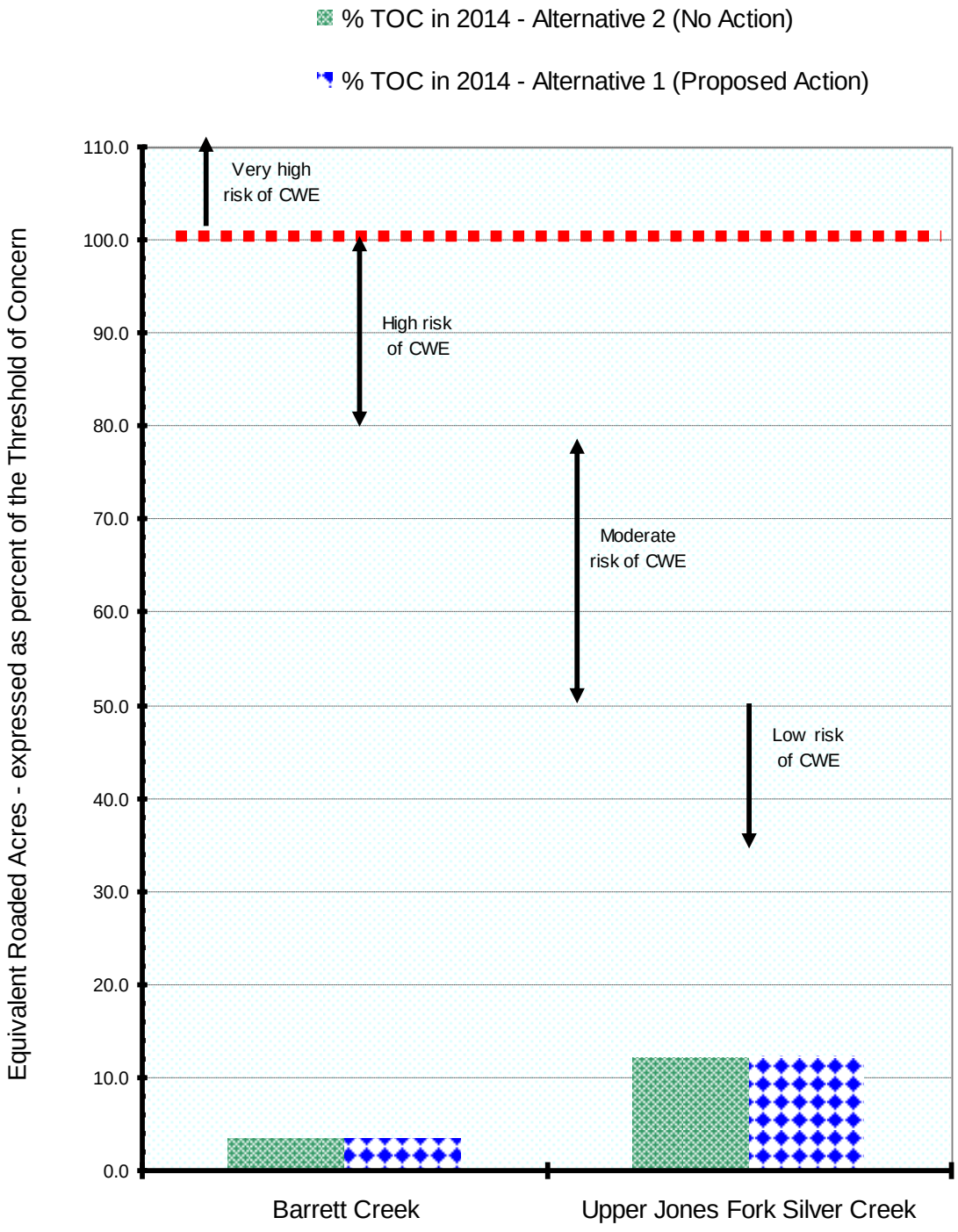
[2] The *risk* of CWE is the same for Alternatives 1 and 2. The ERA for Alternatives 1 and 2 are nearly the same because the amount of ground disturbance by Alternative 1 (Proposed Action) borders on negligible when compared to the size of a HUC 7 watershed.

[3] Risk of CWE, expressed as a percent of the TOC: 0 - 49% = Low risk; 50 - 80% = Moderate risk; 81 - 100% = High risk; greater than 100% (greater than the TOC) = Very high risk.

[4] No reasonably foreseeable land disturbances have been identified in these watersheds. In order for a land disturbance to be considered reasonably foreseeable, the number of acres, type of ground disturbance, and year(s) of disturbance must be identified.

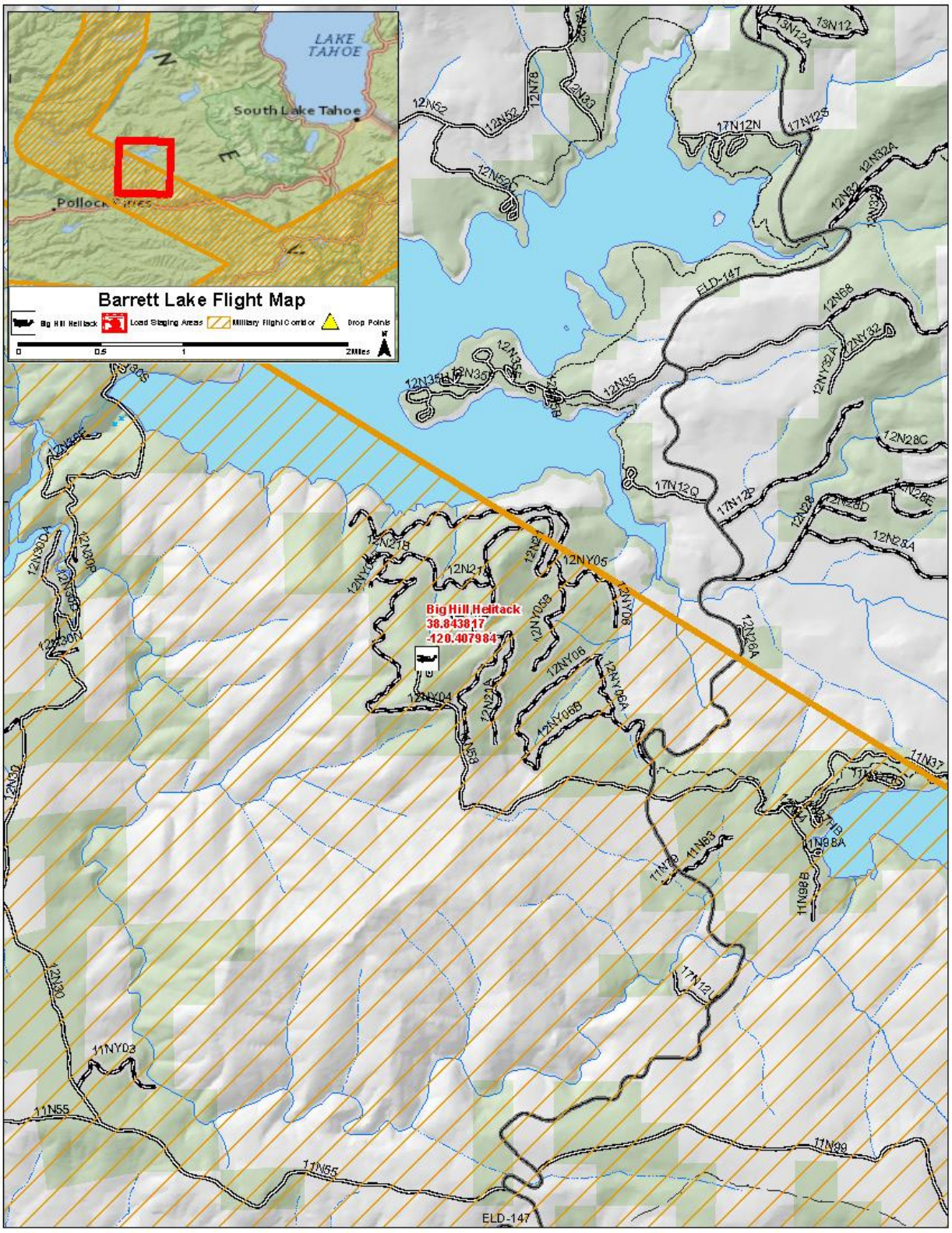
[5] Assumes that Alternative 1 (Proposed Action) is implemented in 2014.

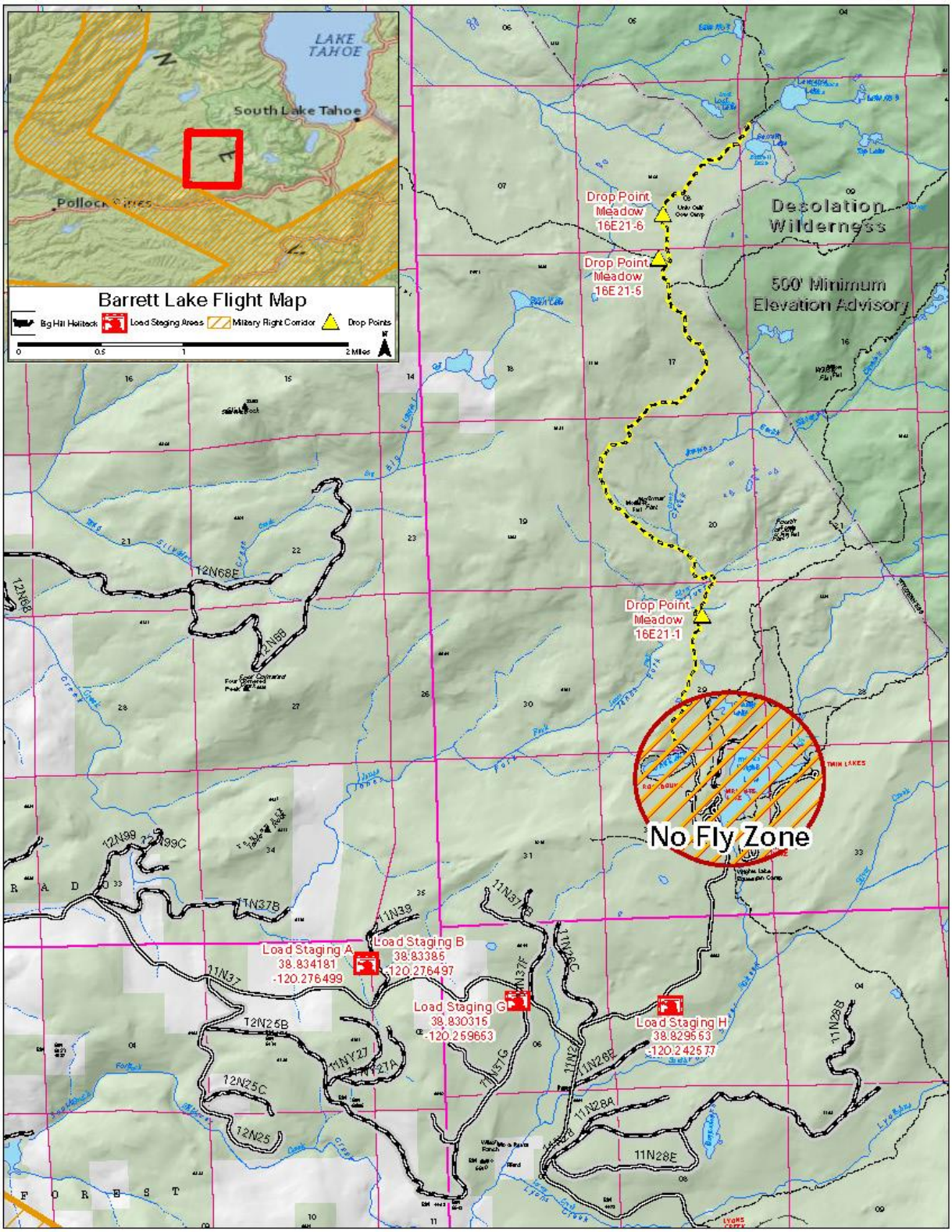
Risk of Cumulative Watershed Effects (CWE) in 2014 - expressed in terms of Equivalent Roaded Acres ERA) as a percent of the Threshold of Concern (TOC) - for the two watersheds that contain the Barrett 4wd Trail Reconstruction Project.1



[1] Assumes that Alternative 1 (Proposed Action) is implemented in 2014. The graph would look the same for 2015.

Appendix E: Helicopter Operations Maps and Photos





xiii Barrett 4wd Trail Reconstruction

Photos of Potential Staging Areas for the Barrett Trail Reroute Project

Taken by C.Parker

Staging A on 11N39, view NW

Staging A on 11N39, view NE

Staging B on 11N39, view E

Staging B on 11N39, view NW

Staging G on Wrights Tie Road, view W

Staging H on Wrights Road, view SE